



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,461	01/26/2004	Charles Patrick Rehberg	16887-002001	8603
69713	7590	08/17/2007	EXAMINER	
OCCHIUTI ROHLICEK & TSAO, LLP			HIRL, JOSEPH P	
10 FAWCETT STREET			ART UNIT	PAPER NUMBER
CAMBRIDGE, MA 02138			2129	
			MAIL DATE	DELIVERY MODE
			08/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/765,461	REHBERG ET AL.	
	Examiner	Art Unit	
	Joseph P. Hirl	2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 08 August 2007.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) 12-20 are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 26 January 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All . b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

Art Unit: 2129

DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered August 8, 2007 for the patent application 10/765,461 filed on January 26, 2004.
2. All prior office actions are fully incorporated into this Office Action by reference.

Status of Claims

3. Claims 1-20 are pending in this application.

Restriction by Original Presentation

4. Newly submitted claims 12-20 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 1-11 are classified in class 706/47, Knowledge Processing System, Rule based reasoning system and 706/46, Knowledge Processing System, Knowledge representation and reasoning technique. Applicant has acknowledged the independency of the new claims by making such claims independent from the prior claim set.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12-20 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Masui et al.

Examiner's Note (EN): ¶ 12. below applies. Person of ordinary skill in the art (POSITA) knows that a classic computer is implemented using binary elements to include gates and memory media. Such implementation is further done with zeroes or ones arranged in groups, elements of such groups are referred to as bits (0/1). Since zeroes and ones are numbers grouped together, such representation will of consequence be a vector representing a rule with bits ... a rule bit vector. Selection bit vectors are similarly configured and represented. Representation of related information by coding the bit is the process of programming ... not new or not non-obvious. Hence, such limitation claimed by the applicant amount to no limitations since POSITA would of consequence have performed such actions without such identified limitations ... just the way it has to be done ... the way it has been done for a long time ... nothing novel and for sure quite obvious. Therefore, the examiner considers the instant amendments to the claims to be of a neutral or no effect consequence and adding such amendments to the claims below, requires no additional prior art. Hence, such related "wherein" amendments are

Art Unit: 2129

treated in accordance with MPEP 2111.04. and are not given weight (not incorporated with the claim statements below) because such amendments have no limiting effect.

Regarding claim 1

(1). A method for processing rules (C 1, L 6-16; ¶ 12. below applies) comprising:
accepting a rules base comprising a plurality of rules (figures 1 & 2, also C 1, L 24-37, also C 2, L 50 through C 3, L 20) each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-54), at least some of the conditions including multiple condition elements (C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names and attribute values. The conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses corresponding to nodes of the network" also C 9, L 42 through C 10, L 44, where it states,, generating a hierarchical graph whose structural elements are LHS and RHS patterns"), and
processing the rules base to form a data structure in a computing system (C 2, L 43 through C 3, L,20; Fig. 1; "rule relation graph"), each rule being associated with a corresponding portion of the data structure, each corresponding portion representing the condition for the rule and including storage locations (C 1, L 24-54, where it states -the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node" ... structure; also C 2, L 43 through C 3, L 20) for holding values of the condition elements of the conditions for said rule (C 5, L 26 through C 6, L 24 where it states " `?x' represents a variable, which takes a same number within a

single rule" as well as C 13. Masui's variable could be of various types, including Boolean as an example).

Regarding claim 3

(2). The method of claim 1 further comprising:
processing a plurality of facts, including evaluating condition elements that depend on the facts (C 1, L 9-16; facts are merely something that is known, like the data used to determine whether or not conditions are satisfied), and storing results of evaluating the condition elements (C 5, L 26 through C 6, L 24 where it states " ?x, represents a variable which takes a same number within a single rule"; also C 13) in the storage locations for holding the values of the condition elements (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node"; also C 2, L 43 through C 3, L 20).

Regarding claim 4

(3). The method of claim 1 wherein the data structure links each fact to corresponding condition elements that depend on that fact (C 2, L 38 through C 3, L 20; through the use of shortcut arcs and corresponding nodes of the network).

Regarding claim 5

(4). The method of claim 4 further comprising processing a plurality of facts (C.1, L 9-16; facts are merely something that is known, like the data used to determine whether or not conditions are satisfied), including determining applicable rules of the plurality of rules based on the accepted facts by identifying condition elements that

Art Unit: 2129

depend on the accepted facts using the data structure (C 1, L 9-16; RETE algorithm is an efficient pattern matching algorithm for implementing rule-based ("expert") systems described here and incorporated by reference, which determines applicability of rules).

Regarding claim 6

(5). The method of claim 1 wherein the data structure includes for each of the plurality of rules, data values corresponding to the storage locations for the values of the condition elements (C 3, L 46-59 where it states "An attribute regarding the direction of information flow on an arc of the network is provided" This added attribute detailing the direction of information corresponds to applicant's data values for the storage locations of the values of the condition elements), said data values representing a logical combination of condition elements (C 3, L 46-59, also C 4, L 1-57; examiner reads the logical combination of the condition elements as the coupling between consequence and condition part networks; accomplished through this connecting arc).

Regarding claim 7

(6). The method of claim 6 further comprising: identifying applicable ones of the plurality of rules using the data values (C 4, L 1-13) representing the logical combination of the condition elements and values stored in the storage locations for storing values of the condition elements (C 3, L 46-59, also C 4, L 1-57; examiner reads the logical combination of the condition elements as the coupling between consequence and condition part networks, accomplished through this connecting arc).

Regarding claim 8

(7). A system for processing a rules base (C 1; L 6-16; ¶ 12. below applies)

comprising:

a data structure formed using a rules base that includes a plurality of rules (C 2, L 38-49; "rule relation graph"), each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-54), at least some of the conditions including multiple condition elements (C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names and attribute values. The conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses corresponding to nodes of the network" also C 9, L 42 through C 10, L 44, where it states "generating a hierarchical graph whose structural elements are LHS and RHS patterns"), each rule of the rules base being associated with a corresponding portion of the data structure, each corresponding different portion representing the condition for the rule and including storage locations (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node"; also C 2, L 43 through C 3, L 20) for holding values of the condition elements of the conditions for said rule (C 5, L 26 through C 6, L 24 where it states ".?x represents a variable which takes a same number within a single rule" as well as C 13. Masui's variable could be of various types, including Boolean); and a compiler for processing the rules base (C 1-5, particularly C 1, L 5 through C 3, L 20, where it states "The conditions of current data are constructed of a plurality of condition clauses representative of current data

Art Unit: 2129

attributes, the condition clauses corresponding to nodes of the network" The compiling section is the construction of the plurality of condition clauses), the rules base comprising a plurality of rules (figures 1 & 2, also C 1, L 24-37, also C 2, L 50 through C 3, L 20), each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-54), at least some of the conditions including multiple condition elements. (C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names and attribute values. The conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses . corresponding to nodes of the network. The following procedure is carried out to determine whether the conditions are satisfied or not...., also C 9, L 42 through C 10, L 44, where it states "generating a hierarchical graph whose structural elements are LHS and RHS patterns").

Regarding claim 9

(8). A rules processing system comprising (C 1, L 6-16; ¶ 12. below applies):
a data structure formed using a rules base that includes a plurality of rules (C 2, L 38-49; "rule relation graph"), each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-38), at least some of the conditions including multiple condition elements (C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names .and attribute values. The

Art Unit: 2129

conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses corresponding to nodes of the network. The following procedure is carried out to determine whether the conditions are satisfied or not..., - also C 9, L 42 through C 10, L 44, where it states, generating a hierarchical graph whose structural elements are LHS and RHS patterns"), each rule being associated with a corresponding portion of the data structure, each corresponding portion representing the condition for the rule and including storage locations (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node") for holding values of the condition elements of the conditions for said rule (C 5, L 26 through C 6; L 24 where it states "?X represents a variable which takes a same number within a single rule" as well as C 13. Masui's variable could be of various types, including Boolean); and a rules processing engine (Element 4 of Figure 1; since an engine is defined to be something that produces some effect from a given input, an inference program / inference engine and rules processing engine are equivalent) coupled to the data structure (Figure 1; also C 1, L 5-61; the data is connected to the structure through the process that analyzes it) for operation according to the rules base (C 2, L 37 through C 3, L 46).

Regarding claim 10

(9). A data structure embodied in a computer-readable medium for use in rules processing (Figure 1; also C 2, L 38-49; "rule relation graph" this graph is created on a computer; therefore it is embodied in a computer readable medium; ¶ 11. below applies) comprising:

storage locations for values associated with conditions for a plurality of rules in a rules base (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node; also C 2, L 43 through C 3, L 20), wherein the rules base" comprises a plurality of rules (C 2, L 38-49; "rule relation graph"), each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-54), at least some of the conditions including multiple condition elements (C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names and attribute values. The conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses corresponding to nodes of the network" also C 9, L 42 through C 10, L 44, where it states "generating a hierarchical graph whose structural elements are LHS and RHS patterns"); wherein each rule is associated with a corresponding bit vector of the data structure, each bit vector including storage locations (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node"; also C 2, L 43 through C 3, L 20; the nodes of the network form the hierarchy to which each node has condition clauses or rules) for holding values of the condition elements of the conditions for said rule (C 5, L 26 through C 6, L 24 where it states " `?X represents a variable which takes a same number within a single rule" as well as C 13. Masui's variable could be of various types, including Boolean).

Regarding claim 11

(10). Software comprising instructions embodied in a computer-readable medium for causing a computer system to (¶ 12. below applies):

accept a rules base comprising a plurality of rules (figures 1 & 2, also C 1, L 24-37, also C 2, L 50 through C 3, L 20), each rule including a condition that includes one or more condition element for application of the rule (C 1, L 9-54), at least some of the conditions including multiple condition elements(C 1, L 17 through C 2, L 35 where it states "the conditions being the structural data composed of the names of so-called current data and one or a plurality of pairs of attribute names and attribute values. The conditions of current data are constructed of a plurality of condition clauses representative of current data attributes, the condition clauses corresponding to nodes of the network" also C 9, L 42 through C 10, L 44, where it states "generating a hierarchical graph whose structural elements are LHS and RHS patterns"); and process the rules base to form a data structure (C 2, L 43 through C 3, L 20; "rule relation graph"), each rule being associated with a corresponding portion of the data structure, the corresponding portion representing the condition for the rule (C 1, L 24-54, where it states "the current data are supplied to the network to check if the data satisfy the condition clauses stored in each node"; also C 2, L 43 through C 3, L 20; the nodes of the network form the hierarchy to which each node has condition clauses or rules); and including storage locations for holding values of the condition elements of the conditions for said rule (C 5, . L 26 through C 6, L 24 where it states " '?X' represents a variable which takes a same number within a single rule" as well as C 13. Masui's variable could be of various types, including Boolean).

Response to Arguments

7. The rejection of claims 1, and 3-11 under 35 USC 101 is withdrawn considering new USPTO policy guidelines and applicants specification (¶ 001-020).

8. The Remarks dated August 8, 2007 on pages 8-11 to include the related footnotes are acknowledged but do not address the specific, detailed rejection points cited by the Examiner on a per claim and subclaim basis in prior office actions to include the Final Office action of October 12, 2006. Further and for the applicant's information, the official response to the pre-appeal brief dated April 12, 2007 was the Notice of Panel Decision from Pre-Appeal Brief Review sent to applicant on May 7, 2007. Applicant is expected to respond to each and every specific point of rejection made by the Examiner in any response to office actions to include the instant action (37 CFR 1.111). The arguments of the applicant's Remarks are parallel and without recognition of the specific sections of the prior art cited by the Examiner. Case in point, applicant cites in the Remarks on page 5, line 22-27, the following:

...Masui neither discloses nor suggests that the corresponding portion of the data structure includes the storage locations...

On page 5, lines 9-18, of the Final Office Action dated October 12, 2006, the subject matter is addressed but is not cited by the applicant to include reasons why the specific references do not apply. For the prosecution to properly proceed, each and every point of rejection to include the associated points of prior art must be specifically addressed. Concerning references to Rete, applicant is encouraged to review MPEP 2131.05.

Examination Considerations

9. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, I 45-48; p 2100-9, c 1, I 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.
10. Examiner's Notes are provided with the cited references to prior art to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.
11. Unless otherwise annotated, Examiner's statements are to be interpreted in reference to that of one of ordinary skill in the art. Statements made in reference to the condition of the disclosure constitute, on the face of it, the basis and such would be

Art Unit: 2129

obvious to one of ordinary skill in the art, establishing thereby an inherent *prima facie* statement.

12. Examiner's Opinion: ¶¶ 9.-11. apply. The Examiner has full latitude to interpret each claim in the broadest reasonable sense.

Conclusion

13. Claims 1, 3-11 are rejected. Claims 12-20 are withdrawn.

Correspondence Information

14. Any inquiry concerning this information or related to the subject disclosure should be directed to the Primary Examiner, Joseph P. Hirl, whose telephone number is (571) 272-3685. The Examiner can be reached on Monday – Thursday from 5:30 a.m. to 4:00 p.m.

As detailed in MPEP 502.03, communications via Internet e-mail are at the discretion of the applicant. Without a written authorization by applicant recorded in the applicant's file, the USPTO will not respond via e-mail to any Internet correspondence which contains information subject to the confidentiality requirement as set forth in 35 U.S.C. 122. A paper copy of such correspondence will be placed in the appropriate patent application. The following is an example authorization which may be used by the applicant:

Notwithstanding the lack of security with Internet Communications, I hereby authorize the USPTO to communicate with me concerning any subject matter related to the instant application by e-mail. I understand that a copy of such communications related to formal submissions will be made of record in the applications file.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, David R. Vincent can be reached at (571) 272-3080. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

Washington, D. C. 20231;

Hand delivered to:

Receptionist,

Customer Service Window,

Randolph Building,

401 Dulany Street,

Alexandria, Virginia 22313,

(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 273-8300 (for formal communications intended for entry).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2129

you have any questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).



Joseph P. Hirl
Primary Examiner
August 16, 2007